

USSR

LEVIN, YE. S., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 1, 1973, pp 31-36

alloy composition. Enthalpy and entropy of the solubility of atomic hydrogen in Co-Al alloys, coefficients of hydrogen activity, and interaction parameters of dissolved hydrogen indicate that the solubility of hydrogen in these alloys is determined by the structure of a shortrange order and by the presence of microgroups in a melt of changeable composition ( $\text{Co}_x\text{Al}_y$  type). The solubility of hydrogen in Co-Al alloys also depends on Co and Al atoms which do not take part in the formation of localized bonds between Co and Al. The concentration and nature of the solvent atoms which do not participate in the formation of quasi-molecular  $\text{Co}_x\text{Al}_y$  complexes plays an important role in determining the solubility percentage of hydrogen in Co-Al alloys. The solubility of hydrogen at 1535, 1530, and 1630°C in the presence of  $x_{\text{Al}} \leq 0.6$  is respectively,

$$x_{\text{H}}^{\text{Co, Al}} = 0.00058 + 0.002056(x_{\text{Al}} - 0.6)^2$$

$$x_{\text{H}}^{\text{Co, Al}} = 0.00069 + 0.001889(x_{\text{Al}} - 0.6)^2$$

2/3

- 74 -

USSR

LEVIN, YE. S., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 1, 1973, pp 31-36

$$x_{H, 1630^{\circ}C}^{Co, Al} = 0.00076 + 0.001833(x_{Al} - 0.6)^2.$$

When  $x_{Al} \geq 0.6$  the hydrogen solubility at the same temperatures is:

$$x_{H, 1535^{\circ}C}^{Co, Al} = 0.00058 + 0.004938(x_{Al} - 0.6)^2$$

$$x_{H, 1580^{\circ}C}^{Co, Al} = 0.00069 + 0.005312(x_{Al} - 0.6)^2$$

$$x_{H, 1630^{\circ}C}^{Co, Al} = 0.00076 + 0.006125(x_{Al} - 0.6)^2.$$

USSR

UDC 669.111.35:669.017.3

PIGROVA, G. D., and LEVIN, Ye. Ye., Central Boiler and Turbine Institute imeni I. I. Polzunov

"Carbide Phases in Heat-Resistant Nickel-Base Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 6, Jun 72, pp 1297-1301

Abstract: A study was made of the character of carbide transformations in long-term aging in the 700-1000°C temperature range in some widely used heat-resistant nickel-base alloys. The dependence of the quantity of carbides on the aging temperature, the carbon content in the alloy, and the type of the forming carbide were investigated. The type of carbide phase is shown to be defined only by the relation of the elements of the sixth group and not by their quantity. The composition, type, and quantity of carbides can be calculated beforehand. In long-term aging, in alloys with less than 0.1% C, the principal carbides are the  $M_{23}C_6$  and  $M_6C$  types. An earlier assumption (Sims, C.T., J. Metals, 1966, No 15, p 1119), that one-half of the C atoms are bound in the MC carbide and the other half in  $M_{23}C_6$  or  $M_6C$ , seems generally to be erroneous; it is correct only in certain individual cases. Three figures, two tables, six bibliographic references.

1/1

USSR

UDC 621.438-253.5:669.245:  
:621.791.011

LEVIN, Ye. Ye.

"The Selection of Dispersion Hardening Alloys on Nickel Base for Gas Turbine Blades"

V sb. "Legirovaniye i Svoystva Zharoprochn. Splavov" / In the collection "Alloying and Properties of Heat-Resisting Alloys", Moscow, "Nauka", 1971, pp 119-123 (from Referativnyy Zhurnal, Turbostroyeniye, No 49, Single Issue No 4, Apr 72, Abstract No 4.49.151)

Translation: The nickel alloys in today's use for gas turbine blades with lasting resource can be employed safely up to a working temperature of the metal not exceeding 800 °C. From a further temperature increase, complex problems arise which are combined with an extensive loss of strength of the alloy, oxidation, and an increased intergranular desintegration sensitivity. The main alloying principles are cited which have to be considered by processing alloys on nickel base for operation by a metal temperature exceeding 800 °C. On the basis of an analysis of

1/2

USSR

LEVIN, Ye. Ye., "Legirovaniye i Svoystva Zharoprochn. Splavov," Moscow, "Nauka," 1971, pp 119-123 (from Referativnyy Zhurnal, Turbostroyeniye, No 49, Single Issue No 4, Apr 72, Abstract No 4.49.151)

the composition and the structure of known alloys, recommendations are given for the  $\gamma$ -phase quantity, carbon and cobalt contents, and the relation of the elements of the sixth group. On the basis of the Fakomp-method, limitations are recommended preventing the formation of embrittling  $\gamma$ - and  $\mu$ -phases. One illustr., three tables, six biblio. refs.

2/2

- 57 -

USSR

UDC 669.245.018.298

LEVIN YE. YE.

"Selection of Dispersion Hardening Alloys Based on Nickel for Gas Turbine Vanes"

V sb Legirovaniye i svoystva zharoprochn. splavov (Alloying and Properties of Heat-Resistant Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 119-123 (from RZh-Metallurgiya, No 4, Apr 72, Abstract 41734)

Translation: A study was made of the basic principles of alloying which must be considered when developing alloys based on nickel for operation at a metal temperature greater than 800°. On the basis of analysis of the composition and structure of the known alloys, recommendations are made with respect to the amount of  $\gamma$ -phase, the C and Co content, and the ratio of the group VI elements. Restrictions preventing the formation of embrittling  $\gamma$  and  $\mu$ -phases are recommended on the basis of the Fakomp method. One illustration, three tables, and a 6-entry bibliography.

1/1

- 39 -

USSR

UDC 539.4

LEVIN, YE.YE., KAZENINA, A.D., KURATOV, P.S., GUREVICH, G.I., GENSERSON, I.G.,  
LUBMAN, P.M., Central Scientific Research, Planning, and Design Boiler  
and Turbine Institute imeni I.I. Polzunov

"Some Results of Acceleration Tests of Disk Models Made of Steel EP 631"

Kiev, Problemy Prochnosti, No 2, 1972, pp 113-116

Abstract: The experience of preparing and testing disks with a diameter of 355 x 46 mm, made of ingots weighing 0.8 t, is set forth for the first time. Steel EP631 was melted in a 5-ton electric arc furnace with subsequent vacuum-arc remelting. The heat-treatment regime of the disks is presented, as well as their mechanical properties in various directions. The results of acceleration tests of two models of the disks of one of the turbo machines are presented. Tests were carried out on disks without incisions, as well as on disks with "effective" incisions on the internal diameter, 10 mm deep and with a curvature radius of 0.18 mm. The obtained results testified to the actual possibilities of preparing and using disks of the indicated size from steel EP631. 3 figures, 3 tables, 9 bibliographic entries.

1/1

- 83 -

USSR

UDC 669.715

LEVIN, YE. S.

"Polytherms of Viscosity and Self-Diffusion of Liquid Aluminum"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 5, Sep/Oct 71, pp 72-78

Abstract: Literature data on the temperature dependence of viscosity of molten aluminum are refined and systematized. Specimens for the investigation were cut from grade AV000 aluminum (99.99% Al, 0.003% Fe, 0.005% Cu, and 0.002% Si). Two series of melts were conducted. In the first the kinetic viscosity of aluminum was measured during heating of the liquid metal, and in the second -- during heating and cooling, where the molten aluminum was maintained for a long period (40-60 minutes) at each temperature study. Literature data on the viscosity of aluminum at the same temperature (especially at low temperatures) differ by approximately a factor of 6. The temperature dependence of the viscosity of liquid aluminum was investigated in the range of 700-1550°. It was confirmed that viscosity decreases exponentially with temperature rise. The energy activation of viscous flow and the energy of interatomic interaction in liquid aluminum were evaluated. It was found that close to 740° there is an abrupt change in the energy of activation. The following formula was derived for self-diffusion of aluminum:  $D = 6.46 \cdot 10^{-16} (T \rho^{1/3} / \eta)$ , m<sup>2</sup>/sec. It is clear

1/2



USSR

Physical Properties

UDC: 669.13'71'26

LEVIN, Ye. S., and AYUSHINA, G. D., Sverdlovsk

"Viscosity and Electroconductivity of Al-Fe-Cr Melts"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, no 6, Nov-Dec 70, pp 52-57

Abstract: The physical properties of Fe-Cr-Al melts have never been a subject of a systematic study though it is of interest to know the characteristics of particle interaction and their internal structure. The experimental specimens were prepared from carbonyl iron of V-3 quality (99.988% Fe), doubly refined electrolytic chromium, and AV-000-grade aluminum (99.999% Al). This study deals with the temperature and concentration dependences of the kinematic viscosity ( $\nu$ ) of Al-Fe-Cr melts. The dependence of  $\nu$  on composition does not adhere to the law of additivity. In melts containing 20% aluminum, as the iron-to-chromium concentration ratio ( $\beta$ ) is increased, viscosity monotonically increases. In melts with  $\beta=1$ , as the aluminum content is increased from 15 to 65%, kinematic viscosity decreases at 1650°C from 0.00000058 to 0.00000039 m<sup>2</sup>/sec. A melt with 5%

1/2

USSR

LEVIN, Ye. S., and AYUSHINA, G. D., Izvestiya Akademii Nauk SSSR, Metallurgiya, No 6, Nov-Dec 70, pp 52-57

aluminum displays much lower viscosity values (less than  $0.0000004 \text{ m}^2/\text{sec}$  at temperatures above  $1500^\circ\text{C}$ ). The electroconductivity was studied over a wide range of temperatures and compositions and was found to depend on both temperature and composition. The properties of Al-Fe-Cr melts are well apart from those of ideal alloys. It is suggested that quasi-molecular complexes of microinhomogeneous structure may form in the alloys.

2/2

Physical Properties

USSR

UDC 669.245.715-154

LEVIN, YE. S., and AYUSHINA, G. D., Sverdlovsk

"Study of Certain Physical-Chemical Properties of Ni-Al Melts"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan 71,  
pp 227-229

Abstract: The concentration dependence of viscosity, gram-atom volumes, and surface energy of liquid nickel aluminides was studied. It was confirmed that these alloys fall in the category of solutions with strongly interacting particles. It was demonstrated that the specifics of the structure-sensitive characteristics of liquid Ni-Al alloys are related to the formation of microgroups of near equiatomic concentration.

1/1

USSR

LEVIN, Ya. S., AYVASHINA, N. D., and OBL'D, P. V., Sverdlovsk

"Viscosity of Ni-Al Melts"

Moscow, Izvestiya Akademii Nauk SSSR, Metallurgy, No 4, Jul-Aug 74, pp 44-53

Abstract: Temperature and concentration characteristics of the dynamic viscosity of Ni-Al melts were investigated on a series of samples of pure Al and pure Ni by the oscillating-torsion method on the basis of the logarithmic damping decrement. The accuracy of the calculated viscosity from the formula for mildly viscous liquids was 0.5%. In order to explain the characteristics of interparticle correlations in Ni-Al melts, the effect of their chemical compositions on the viscosity at constant temperature was investigated. The investigation results are discussed by reference to diagrams. It is shown that the concentration dependencies of the viscosity and the variation of the isobar-enthalpy potential of the viscous flow process do not comply with the additivity rule. The viscosity characteristics, the densities, and the surface energies of the investigated Ni-Al alloys are explained by the formation of thermal stable microgroups. The composition and structure of these groups define the physico-chemical properties of the fusions.

1/1

USSR

UDC 51:330.115

LEVIN, Yu. I.

"One Extreme Problem"

Sb. tr. Mosk. Inzh.-stroit. In-t [Collected Works of Moscow Construction Engineering Institute], No 83, 1970, pp 175-184, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V725 by the author).

Translation: A mathematical model of the hierarchical organization of a team is constructed. An algorithm for determination of the structure of such a team, optimal from the point of view of speed of propagation of information, is described.

1/1

USSR

UDC 539.67

ARTYEMENKO, A. G., LEVIN, Yu. N., MASLENNIKOV, E. M., PESIN, M. S., and POSTNIKOV, V. S.

"Mechanism of Energy Absorption in Diffusion Shape Variation of Impurities in Binary Alloys"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 159-163

Abstract: A short description and an experimental verification by the internal friction method of the energy absorption mechanism in diffusion shape variation of impurities in binary alloys are presented.

Alloys of Cd-Ge, Zn-Ge, and Bi-Ag eutectic composition systems were used as impurity-containing alloys. Peaks related to diffusion, occurring along the impurities boundaries as a result of the onset of an inhomogeneous stress state during measurements, were obtained on internal friction amplitude-dependence curves.

The results obtained confirm the theory of the impurities diffusion shape variation mechanism developed earlier. 2 figures, 6 references.

1/1

- 82 -

USSR

UDC: 51

VASIL'YEV, V. V., DODONOV, A. G., LEVINA, A. I.

"On a Method of Solving the Traveling Salesman Problem"

Tr. Seminara po metodam mat. modelir. i teorii elektr. tsepey. In-t kibernet. AN USSR (Works of the Seminar on Methods of Mathematical Modeling and Electric Circuit Theory. Institute of Cybernetics, Academy of Sciences of the Ukrainian SSR), 1971, vyp. 9, pp 58-67 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4v449)

Translation: A method is outlined for solving the problem of the traveling salesman. The procedure is based on solution of the problem of the shortest path on an expanded graph. Possibilities of reducing the dimensions of an expanded graph are discussed. The method enables simulation of least-dimension problems on type ASOR computers. Authors' abstract.

1/1

1/2 010  
UNCLASSIFIED  
TITLE--MANIFESTATION OF STRUCTURAL FEATURES OF AQUEOUS ORGANIC MIXTURES IN  
THE KINETICS OF THE REACTION BETWEEN IRON II IONS AND  
AUTHOR--(03)--ZUSMAN, R.I., LEVINA, A.S., MOLIN, YU.N.  
PROCESSING DATE--27NOV70  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(5), 1060-2  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--SULFONE, BENZENE DERIVATIVE, HYDRAZINE ORGANIC COMPOUND, IRON,  
REACTION KINETICS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3005/0788  
CIRC ACCESSION NO--AT0132886  
STEP NO--UR/0020/70/191/005/1060/1062  
UNCLASSIFIED



2/2 010

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0132886

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC DATA WERE SHOWN GRAPHICALLY FOR REACTION OF FE PRIME2POSITIVE WITH SULFONATED DIPHENYLPICRYLHYDRAZYL STABLE RADICAL IN AQ. MECH, ETON, PRON, ME SUB3 COH AND DIOXANE SYSTEMS IN THE 15-25DEGREES INTERVAL. GENERALLY THE RATE CONST. DECLINED IN THE REGION OF HIGH CONCNS. OF THE SUBSTRATE, POSSIBLY OWING TO DECLINING CHARGE ON THE REACTANTS AS A RESULT OF THEIR ASSOEN. WITH COUNTERIONS IN MEDIA OF LOW DIELEC. CONST. A MIN. IN THE RATE CONSTANT WAS OBSD. AT SIMILAR TO 0.1 MOLE FRACTION CONCEN. OF THE ORG. COMPONENT OF THE SYSTEM AND THE LIKELY REASONS FOR THIS WERE BRIEFLY DISCUSSED.

FACILITY: INST. KHIM. KINET. GORENIYA,

NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--PHYSICOCHEMICAL METHOD FOR EVALUATING THE RELATIVE ACTIVITY OF  
FILLERS IN RUBBERS -U-  
AUTHOR--BORODINA, V.N., TOLSTAYA, S.N., TAUBMAN, A.B., LEVINA, A.YU.,  
NIKIFOROVA, A.P.  
COUNTRY OF INFO--USSR

SOURCE--KOZH. POBUV. PROM. 1970, 12(2), 37-41

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FILLER, SILICA, KAOLIN, RUBBER, POLYSTYRENE RESIN/(U)SKS30R  
STYRENE RUBBER, (U)SKS30 STYRENE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1989/0206

STEP NO--UR/0498/70/012/002/0037/0041

CIRC ACCESSION NO--AP0106862

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

2/2 013

CIRC ACCESSION NO--AP0106862

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PHYSICOCHEM. METHOD WAS DEVELOPED FOR THE STUDY OF CROSSLINKING OF CONCD. SUSPENSIONS OF FILLERS (E.G. AEROSIL A-175(I), FINE SILICA FILLERS (II) (RS-150 AND RS-50), KAOLIN (III), AND CACO SUB3) IN DIL. SOLN. OF SKMS-30R (IV) AND SKS-30 (V) RUBBERS IN PHME. THE EXPTS. WERE CONDUCTED IN SMALL BEAKERS EQUIPPED WITH GROUND GLASS STOPPERS. A PORTION OF A FILLER WAS DRIED TO CONST. WT. AT 120-400DEGREES, PLACED IN THE BEAKER AND COVERED WITH 10 ML IV OR V SOLN. IN PHME, THE MIXT. WAS CAREFULLY STIRRED, AND A GROOVED MICA PLATE (10 TIMES 10 MM) WAS PLACED IN THE PPT. AFTER THE CROSSLINKING HAS BEEN COMPLETED, THE MAX. STATIC SHEAR STRESS (P SUBM) WAS EVALUATED BY MEASURING THE TANGENTIAL DISPLACEMENT OF THE PLATE ON A HEILER REBINDER APP. A PLOT OF P SUBM EQUALS  $F(A)$  (WHERE A IS THE FILLER CONTENT-100 G V) SUGGESTED THAT THE ACTIVITY OF FILLERS IN ELASTOMERS DECREASED IN THE ORDER: I LARGER THAN II LARGER THAN III LARGER THAN CACO SUB3. OPTIMUM FILLER CONTENT CAN BE DETD. FROM AN APPROPRIATE GRAPH.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--020C170  
TITLE--CONGENITAL HYPOFERRIC ANEMIA AMENABLE TO VITAMIN B SUB6 TREATMENT  
-U-  
AUTHOR--(04)--IDELSON, L.I., RADZIVILOVSKAYA, E.G., LEVINA, D.A.,  
APOLLONOVA, L.A.  
COUNTRY OF INFO--USSR  
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 3, PP 103-106  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANEMIA, VITAMINE B6, THERAPEUTICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1986/0331

STEP NO--UR/0504/70/042/003/0103/0106

CIRC ACCESSION NO--AP0102793

UNCLASSIFIED

2/2 023

CIRC ACCESSION NO--AP0102793

UNCLASSIFIED

PROCESSING DATE--020CT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PATIENT WITH A SHARPLY MARKED  
HYPOCHROMIC ANEMIA WITH A HIGH IRON CONTENT IN THE BLOOD SERUM AND IN  
THE TISSUES OF THE ORGANISM IS DESCRIBED. A DISORDER OF PROTOPORPHYRIN  
BIOSYNTHESIS FROM COPROPORPHYRINOGEN WAS REVEALED IN THIS PATIENT.  
PRESCRIPTION OF VITAMIN B SUB6 AND THEN PYRIDOXALPHOSPHATE PRODUCED A  
GOOD THERAPEUTIC EFFECT.

UNCLASSIFIED

Oncology

USSR

UDC 616-006.6-092-07:616-008.931

RAPOPORT, I. A., PARNES, V. A., and LEVINA, D. M., Division of Chemical Genetics, Institute of Chemical Physics, Academy of Sciences USSR, and Laboratory of Oncogenic Viruses, Institute of Experimental and Clinical Oncology, Moscow

"Enzymatic Control of the Plasticity of the Organism and Carcinogenesis"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 5, Sep/Oct 70, pp 56-61

Abstract: Most spontaneous and induced tumors are thought to be produced by enzymatic modifications which produce cell transformations. Daughter cells may differ from their parent cells as a result of shifts in chromosomes, or for other reasons such as the effects of chemical carcinogens or shortwave radiation. Apparent "heredity" is created for many generations of malignant cells, since the controlling enzymatic modification involves the key enzyme regulating cellular reproduction. The absence of this enzyme does not lead to the death of the cell but rather to a steady disturbance in cellular multiplication and to interference with other interrelated processes of cellular life activity. The entire set of pathological properties creating the malignancy is thus upon cell division, transmitted to the corresponding daughter cells.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--CAUSES OF CORRELATION BETWEEN CARCINOGENIC AND MUTAGENIC ACTIVITY  
-U-  
AUTHOR--(03)-RAPOPORT, I.A., PARNES, V.A., LEVINA, D.M.  
COUNTRY OF INFO--USSR  
SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970,  
VOL 14, NR 2, PP 23-28  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--TUMOR, CARCINOGEN, MUTAGEN, CELL PHYSIOLOGY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1988/0058 STEP NO--UR/0396/70/014/002/0023/0028  
CIRC ACCESSION NO--AP0105156  
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105156

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. ACCEPTANCE OF MUTATION MECHANISM OF TUMOR TRANSFORMATION IS NOT INFREQUENTLY BASED ON CORRELATION BETWEEN THE MUTAGENIC AND CARCINOGENIC EFFECTS. IN STUDYING THE CAUSES OF COINCIDENCE OF THE MUTATION AND CARCINOGENIC ACTIVITY IT WAS OF IMPORTANCE TO FIND OUT WHETHER THE COMPOUNDS BEARERS OF THIS CORRELATION POSSESSED SOME PROPERTY RESPONSIBLE FOR MANIFESTATION OF BOTH EFFECTS, OR NOT. ANALYSIS OF CONDITIONS DETERMINING THE EFFECTUATION OF MUTAGENIC AND CARCINOGENIC ACTION DEMONSTRATED THE PERMEABILITY FACTOR TO BE THE MOST ESSENTIAL. ABOUT THE SAME DEPTH OF PENETRATION OF THE ACTIVE AGENT INTO THE CELLS IS REQUIRED FOR MUTAGENESIS AND CARCINOGENESIS. MUTAGENS POSSESSING A HIGH PENETRATION GRADIENT CAN ALSO, THEREFORE, BE CARCINOGENIC, BUT THE POINT OF APPLICATION OF THESE EFFECTS, APPARENTLY DIFFER. CORRELATION BETWEEN THE CARCINOGENIC AND CARCINOLYTIC ACTIVITY OF A SUBSTANCE IS ALSO CAUSED BY COINCIDENCE OF THE OPTIMAL PENETRATION GRADIENTS. FACILITY: OTDEL KHIMICHESKOY GENETIKI INSTITUTA KHIMICHESKOY FIZIKI AN SSSR. FACILITY: LABORATORIYA ONKOGENNYKH VIRUSOV INSTITUTA EKSPERIMENTAL'NOY I KLINICHESKOY ONKOLOGII AMN SSSR, MOSKVA.

UNCLASSIFIED



LEVINA, F. G.

SO:IPAS 54153

29 SEP 71

UDC: 617.735-007.17-085.11:547.963.32

THE SPECIFIC THERAPEUTIC EFFECT OF RIBONUCLEOTIDES IN TAPEORETINAL DYSTROPHY  
(Article by F. G. Levina, S. P. Shchegoleva, P. A. Kozlov, V. A. Shchegolev, Institute of Human Pathology, USSR Academy of Medical Sciences, Moscow, and Novosibirsk Institute for the Advanced Training of Physicians, Novosibirsk, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 7, 1971, pp 6368)

In spite of the fact that numerous morphological and topographical investigations have been made in the last few years pertaining to the state of the retina in tapeorretinal dystrophies, the pathogenesis of this group of diseases remained quite unclear, and there was no rational etiopathogenetic therapy.

Yet we are dealing primarily with hereditary disease resulting in poorer vision and blindness of children and young people.

It has been repeatedly proven experimentally that there is a correlation between RNA synthesis, RNA and nucleotide content, and the functional load on the photoreceptor cells of the retina. Regeneration of rhodopsin-containing discs is related to the level of protein synthesis in the rod (Young, 1967). Animals with hereditary retinitis present diminished activity of many enzymes (the enzyme found is particularly diminished) and diminished synthesis of protein in photoreceptor cells (Mandling and Soreby, 1962).

In our studies of the rabbit's retina following monodacetate poisoning (S. P. Shchegoleva and I. B. Morozov, 1968, 1969) it was demonstrated cytochemically that there is a marked drop in cytoplasmic RNA content in the retinal ganglion cells.

We made the assumption that in the presence of hereditary dystrophy in man, the protein synthesizing system of retinal cells is affected as a whole as a result of impaired synthesis of ribonucleotides. This served as the basis for clinical administration of ribonucleotide preparations.

Investigation of RNA and ribonucleotide preparations. Originally, we used preparations of yeast RNA which were prescribed per os in a dosage of up to 2 grams per day for 4-5 weeks. The RNA preparations contained a

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--STUDY OF THE EXCRETION OF PURINES AND URIC FROM URINE OF PATIENTS  
SUFFERING FROM LEUKEMIA WITH VARIOUS CONTENT OF COBAMIDE COMPOUNDS IN  
AUTHOR--(05)--MYASISHCHEVA, N.V., SHERMET, Z.I., LEVINA, G.D., LORIE,  
YU.I., RAUSHENBAKH, M.O.  
COUNTRY OF INFO--USSR  
SOURCE--PROBL GEMATOL PERELIV KROVI 15(1), 36-43. 1970  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--LEUKEMIA, URINE, ORGANIC ACID, PURINE, EXCRETION, VITAMIN,  
COBALT COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/0248 STEP NO--UR/9080/70/015/001/0036/0043  
CIRC ACCESSION NO--AP0117500

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117500

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TOTAL OF 24 PERSONS WERE EXAMINED. IN THE PATIENTS WITH INCREASED LEVEL OF B SUB12 IN THE BLOOD NOT ONLY AN INTENSIFIED EXCRETION IN URIC ACID WAS SEEN, BUT ALSO AN INTENSIFIED EXCRETION OF PURINES AND OF THEIR METHYLATED DERIVATIVES. FACILITY: INST. EXP. CLIN. ONCOL., ACAD. MED. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

Controls

UDC 621.316.722.1(088.8)

USSR

LEVINA, G.V., LEVIN, V.G.

"Voltage Regulator"

USSR Author's Certificate No 262997, filed 22 Apr 68, published 10 June 70 (from RZh--Elektronika i yeye primeneniye, No 1, January 1970, Abstract No 1B467P)

Translation: A circuit is proposed for a voltage regulator with a series composite regulator transistor, a single-stage d-c amplifier, and a silicon stabilatron -- a source of reference voltage, in which a special circuit for supply of the amplifier transistor is used which assures an increase of stability without use of a supplementary source for supply of the amplifier. In accordance with the object of the invention, the d-c amplifier is supplied across a semiconductor and a supplementary filter capacitor from the common rectifier of the regulator to an inductive filter, by virtue of which the voltage for supply of the amplifier is found to be approximately 1.44 times more than the voltage for supply of the control transistor of the regulator. 1 ill. 8.D.

1/1

UNCLASSIFIED

PROCESSING DATE--23OCT70

1/3 029

TITLE--ON THE PERFORMANCE OF A PYROELECTRIC WITH A FIELD EFFECT TRANSISTOR

-U-

AUTHOR--(05)-NOVIK, V.K., NIKONOV, A.S., SOPOV, O.V., LEVINA, I.A.,  
GAVRILOVA, N.D.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 3, MAR 70, PP 642-644

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PYROELECTRIC DETECTOR, FIELD EFFECT TRANSISTOR, ELECTRONIC  
AMPLIFIER, ELECTROMAGNETIC NOISE, VOLT AMPERE CHARACTERISTIC, SILICON,  
SILICON DIOXIDE, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1287/1465

STEP NO--UR/0109/70/000/003/0642/0644

CIRC ACCESSION NO--AP0104759

UNCLASSIFIED

2/3 029

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0104759

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER IS CONCERNED WITH THE PERFORMANCE OF PYROELECTRIC ELEMENTS (INFRARED AND MILLIMETER WAVE DETECTORS, THERMOMETERS, ETC.) WITH A FIELD EFFECT TRANSISTOR. A GROUP OF DEVICES COMBINING RECEIVING AND AMPLIFYING ELEMENTS IN ONE DEVICE WAS INVESTIGATED. THE DEVICES WERE BASED ON SILICON METAL OXIDE SEMICONDUCTOR (MOS) TRANSISTORS WITH P AND N TYPE CHANNELS. THE BASIC GOAL OF THE INVESTIGATION WAS THE DETERMINATION OF THE MAXIMUM VALUE OF THE THERMAL NOISE  $R$  WHICH ASSURES ABSENCE FROM BREAKDOWN OF THE GATE IN THE PRESENCE OF VARIOUS THERMAL EFFECTS (OVER ALL SLOW CHANGE OF TEMPERATURE, POWER PULSE EXPOSURE, ETC.). THE DEVICES WERE ASSEMBLED IN THE CASINGS OF TYPE GT-313 TRANSISTORS. THE SENSING ELEMENTS WERE PREPARED FROM CRYSTALS OF TRIGLYCINESULFATE AND MEASURED SIMILAR TO 3 BY 3 BY 0.5 MM. MOUNTING OF THE ELEMENTS AND THE ELECTRODES TO THEM WAS DONE WITH SILVER PASTE. THE INVESTIGATIONS SHOWED THAT THE STABILITY OF DEVICES WITH A P TYPE CHANNEL WAS DEFINITELY HIGHER. IT WAS DETERMINED THAT THE OPTIMUM VALUE OF  $R$  IS 1 G OHM. WITH SUCH A LOAD, THE THRESHOLD SENSITIVITY IN THE 20 HZ, 20 KHZ RANGE AMOUNTS TO SIMILAR TO 3 TIMES 10 PRIME NEGATIVE 7 WATT. IT WAS FOUND THAT TRANSISTORS WITH A VOLTAGE CUT OFF OF 5 V ARE MOST SUITABLE FOR OPERATION WITH PYROELECTRIC ELEMENTS. IN THAT CASE, THE BIAS VOLTAGE WHICH IS FED TO THE GATE FROM THE DRAIN SOURCE ASSISTS LONG TERM MAINTENANCE OF THE MACROSCOPIC POLARIZATION OF THE CRYSTAL. THE WRITERS CONCLUDE THAT FIELD EFFECT TRANSISTORS ARE PROMISING AMPLIFYING ELEMENTS FOR OPERATION WITH PYROELECTRIC ELEMENTS.

UNCLASSIFIED

3/3. 029

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0104759

ABSTRACT/EXTRACT--USE OF MCS TRANSISTORS IS SUITABLE UP TO A FREQUENCY OF  
SIMILAR TO 1 KHZ. AT HIGHER FREQUENCIES WHERE A SMALLER VALUE OF R IS  
PERMISSIBLE, IT IS ADVISABLE TO USE DEVICES WITH A P-N JUNCTION HAVING  
LESS NOISE. 2 FIG. 8 REF. RECEIVED BY EDITOR: 20 FEB 69.

UNCLASSIFIED

L  
USSR

2  
UDC: 621.382.523

NOVIK, V. K., NIKONOV, A. S., SOPOV, G. V., LEVINA, I. A.,  
GAVRILOVA, N. D., and YEGINA, Ye. K.

"Pyroelectric Operation with Field Effect Transistor"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No. 3, 1970, pp 642-644

Abstract: The authors list four advantages of pyroelectric elements which have made them objects of engineering interest: high input impedance; lower noise level; possibility of combining sensor and amplifying elements in a single device; possibility of designing planar and epitaxial integral sensor and amplifier systems. The pyroelectric detector has a low noise level, and its sensitivity depends on the condition that the product of the frequency, the load resistance, and the crystal capacitance exceed unity, a condition not easily realized in various types of transistor. Other characteristics of pyroelectric transistors are briefly listed. The authors of this brief communication

1/2



USSR

NOVIK, V. K., et al, Radiotekhnika i Elektronika, Vol 15, No 3, 1970, pp 642-644

Abstract:

tested combined sensor-amplifier pyroelectric units with silicon junctions; the purpose of these tests was to establish the maximum value of load resistor required to evade gating breakdown for various thermal reactions such as slow temperature changes, power flare spots, etc. Photographs and a schematic sketch of these devices are shown, and some details of their fabrication are given. The tests showed that the optimal value of the load resistor was 1 gigohm; at this value, the threshold sensitivity in the 20 Hz to 20 kHz was about  $3 \cdot 10^{-7}$  watts. Conclusions arrived at by the authors are: field effect transistors are promising amplifier elements for working with pyroelectric detectors; it is better to combine sensing and amplifying elements in a single package than to mount the pyroelectric directly on the transistor p-n structure.

2/2

Acc. Nr:

AP0041509

Abstracting Service:

CHEMICAL ABST.

LEVINA I.Yu.

Ref. Code:

4/70 UR0366

89562s Rearrangement of carbonium ions during the deamination of some primary alkylamines. Bandel, Yu. G.; Levina, I. Yu.; Reutov, O. A. (USSR). Zh. Org. Khim. 1970, 6(1), 3-5 (Russ). Isobutylamine (I), 1-amino-2-methylbutane (II), and 1-amino-2-ethylbutane (III) were deaminated at 0° in HClO<sub>4</sub> soln. The product distribution (in vol. %), detd. by gas chromatog. was as follows: I → 24.5 iso-BuOH + 22.5 sec-BuOH + 53 tert-BuOH; II → 14.5 2-methylbutanol + 8.5 2-pentanol + 6.5 3-pentanol + 72 2-methyl-2-butanol; III → 12 2-ethylbutanol + 3-hexanol + 3-methyl-3-pentanol. The isomerizations involve not only the migration of H<sup>+</sup>, but also Me and Et group migrations. Et group migrates in preference to Me group due to steric factors and relative stability of the transition carbonium ions.

CPJR

REEL/FRAME

19751377

USSR

UDC: 669.018.4:621.785.78:546.261

GELLER, YU. A., MOISEYEV, V. F., ARANOVICH, A. O., and LEVINA, K. YA.,  
Moscow Machine Tool Institute

"Effect of the Carbide Phase on the Properties of Chromium Tool Steels"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 1,  
1971, pp 145-148

Abstract: The effect of vanadium (1-4%) on the structure and properties of steels containing 3.6 and 12% Cr and 1.0-1.9% C has been studied. It was found that vanadium forms independent carbides at carbon concentrations above 1.6% with 12% Cr, at C concentrations of 1.1 and 0.85% with 6 and 3% Cr, respectively. In steels with lower carbon concentrations, vanadium dissolves in chromium carbides. Due to their high hardness (2200 HV), vanadium carbides raise the wear resistance of the steel and, by reducing the grain size, increase the steel's strength. When present in chromium carbides, vanadium (on hardening) goes into solid solution, causing the

1/2

USSR

GELLER, YU. A., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 1, 1971, pp 145-148

tendency of the steel to precipitation hardening on tempering at 540-560°C, which increases the strength but markedly decreases the steel's ductility (to a fraction of 2-3). Tables in the original article show the chemical composition of the experimental steels, the amount of the carbide phase, and the composition of carbides and the solid solution (as annealed). A figure demonstrating the effect of the hardening temperature on the strength of steel on bending after tempering at 150°C with 3, 6, and 12% Cr is also given.

2/2

USSR

UDC 771.531.3:621.384.326.22

KARIZHENSKIY, Ye. Ya., SHIROBOKOV, A. M., ~~LEVINA, L. A.~~

"Investigation of Exactness of the Intermittent Motion of a Photographic Film in the Photographic Recording System of an Aircraft Television Camera"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 12, December 1971, pp 7-10

Abstract: The article deals with the possibility of a gate mechanism of the electromechanical type, and makes a recommendation concerning its employment, in order to provide the intermittent motion of a photographic film in the photorecording system of aircraft television cameras designed for geologic mapping and for the detection of fires. The exactitude of such a system is investigated. It is found that in the frequency range of 5-25 gates/sec, the relative gate-recording error of the gate mechanism does not exceed 5% with a probability of 0.9. Some distortions on the photographic film, introduced by the gate-recording error, are entirely permissible for the indicated case of the employment of aircraft television cameras. The use of gate mechanism in the photorecording devices of aircraft television cameras considerably simplifies their system and design. 3 figures. 2 tables. 4 references.

1/1

USSR

UDC 615.371:576.851.49).03:616.34-022-084).036.8

KHEYFETS, L. B., LEVINA, L. A., BENTSIANOVA, T. G., and SALMIN, L. V., Moscow  
Institute of Vaccines and Sera imeni Mechnikov

"Protective Activity of Various Antigenic Complexes of Typhoid Vaccines and Prospects on Improving the Chemical Vaccines"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 5, 1970, pp 89-98

Abstract: New possibilities for studying the role of individual antigens in the formation of postvaccinal immunity were discovered in connection with the existence of vaccine samples with a known efficacy for man. Experimental study of these vaccines failed to demonstrate any correlation between the quantitative content of Vi-antigen and the protective capacity for man. However, qualitative differences in O-antigen were revealed in vaccines with a different efficacy for man, which can be detected by immunoelectrophoresis and metachromatic staining. A direct correlation was found between the efficacy of the vaccine and the quantitative content of H-antigen. This is one of the indirect indications of the presence of typhoid protective labile antigen (LP-antigen). The content and activity of LP-antigen in the vaccine is determined by the capacity of the preparation to stimulate formation of H-antibodies during immunization of human beings and experimental animals. In production and improvement of the chemical vaccines, sufficiently

USSR

KHEYFETS, L. B., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,  
No 5, 1970, pp 89-98

and LP-antigens contained in the initial microbial suspensions in a natural condition (as far as possible).

2/2

172 010 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--PROTECTIVE ACTIVITY OF VARIOUS ANTIGENIC COMPLEXES OF TYPHOID  
VACCINES AND PROSPECTS OF IMPROVEMENT OF CHEMICAL VACCINES -U-  
AUTHOR-(04)-KHEYFETS, L.B., LEVINA, L.A., BENTSANOVA, T.G., SALMIN, L.V.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5,

PP 89-96

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TYPHOID FEVER VACCINE, VI ANTIGEN, H ANTIGEN, O ANTIGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1994/0131

STEP NO--UR/0016/70/000/005/0039/0096

CIRC ACCESSION NO--AP0114527

UNCLASSIFIED



2/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114527

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NEW POSSIBILITIES FOR STUDYING THE ROLE OF INDIVIDUAL ANTIGENS IN THE FORMATION OF POST VACCINAL IMMUNITY WERE OPENED IN ASSOCIATION WITH THE PRESENCE OF VACCINE SAMPLES WITH KNOWN EFFICACY FOR MAN. EXPERIMENTAL STUDY OF THESE VACCINES FAILED TO DEMONSTRATE ANY CORRELATION BETWEEN THE QUANTITATIVE CONTENT OF VI ANTIGEN AND THEIR PROTECTIVE CAPACITY FOR MAN. ALONG WITH THIS THERE WERE REVEALED QUALITATIVE DIFFERENCES OF THE O ANTIGEN (DETECTABLE WITH THE AID OF IMMUNOELECTROPHORESIS AND BY METACHROMATIC STAINING) IN THE VACCINES WITH DIFFERENT EFFICACY FOR MAN. THERE WAS FOUND A DIRECT CORRELATION BETWEEN THE EFFICACY OF THE VACCINES AND THE QUANTITATIVE CONTENT OF H ANTIGEN IN THEM; THIS IS ONE OF THE INDIRECT INDICATIONS OF THE EXISTENCE OF TYPHOID PROTECTIVE LABILE ANTIGEN (LP ANTIGEN). THE CONTENT AND THE ACTIVITY OF LP ANTIGEN IN THE VACCINE IS CONTROLLED BY THE CAPACITY OF THE PREPARATION TO STIMULATE FORMATION OF H ANTIBODIES IN IMMUNIZATION OF HUMAN BEINGS AND EXPERIMENTAL ANIMALS. IN ELABORATION AND IMPROVEMENT OF CHEMICAL VACCINES, SUFFICIENTLY DELICATE METHODS SHOULD BE EMPLOYED TO PRESERVE ALL THE COMPONENTS OF O, VI, H AND LP ANTIGENS, CONTAINED IN THE INITIAL MICROBIAL SUSPENSIONS, IN AS FAR AS POSSIBLE NATURAL CONDITION. FACILITY: MOSCOW INSTITUT VAKTSIN I SYVOROTOK IM. MECHNIKOVA.

UNCLASSIFIED

Entomology

UDC 576.895.77(571.65)

USSR

POLYAKOVA, P. Ye., GOMOYUNOVA, N. P., KIR'YASHKINA, L.A., and LEVINA, L. F.  
Biological Institute, Siberian Branch of the Academy of Sciences USSR,  
Novosibirsk

"Blood-Sucking Mosquitos (Diptera, Culinae) of the Omolon River Basin"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Biologicheskikh Nauk, Vol 1, No 5, Apr 70, pp 93-98

Abstract: The phenology of imago and mature phases of mosquitoes and their larvae was studied in the basin of the middle section of the Omolon river. It was a rainy summer in 1968, and the mean temperature was 13.3°C. Only rarely was there a warm day with a temperature of up to 26°C. Seventeen mosquito species were studied, including their distribution and swarming in May-August. The mosquitoes attacked man in daily cycles. The greatest activity was observed during the morning and evening hours. Swarming of the species *A. communis* and *A. pullatus* takes place in the evening hours, and of *A. nigripes* in the daytime. Swarming lasts several hours, particularly in quiet weather at an atmospheric temperature of 8.5-16.5°C, and at a relative humidity of 77-85 percent.

1/1

USSR

UDC 613.71-612.17

LEVINA, L. I. and SUROV, Ye. N., State Twice Decorated Institute of Physical Culture imeni P. F. Lesgaft

"Value of Valsalva's Test in Assessing Changes in the Terminal Part of the EKG Ventricular Complex After Physical Overexertion"

Kazan', Kazanskiy Meditsinskiy Zhurnal, No 6, 1972, pp 33-36

Abstract: Valsalva's test was taken by 36 athletes suffering from myocardial degeneration due to excessive physical exertion and showing changes in the terminal part of the EKG ventricular complex and by 36 athletes in good health and with a normal EKG (control). The EKGs recorded during the test reflected three types of reactions: (a) deepening of the S waves in the  $V_{1-2-3-4}$  leads, lowering of the R waves in the  $V_{3-4-5-6}$  leads, and T waves in the right thoracic leads 1 to 3 m higher and those in the left leads 1 to 3 mm lower - - these are positional changes indicative of a clockwise turning of the heart around the longitudinal axis; (b) no significant positional changes; (c) complete normalization or marked improvement independent of change in the position of the heart. Follow-up studies of the athletes after they discontinued training revealed no EKG changes in those with the first two types of EKG reactions to the Valsalva test, evidence of the persistence of the degeneration. But in 1/2

USSR

LEVINA, L. I. and SUROV, Ye. N., Kazanskiy Meditsinskiy Zhurnal, No 6, 1972, pp 33-36

those with the third type of reaction, discontinuance of training resulted in normalization or considerable improvement of the EKG, a sign that the degeneration had been reversed.

2/2

62

1/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--REACTIONS OF ACETYLENIC CHLORIDES WITH HYDRAZINES. V. REACTION OF  
4,CHLORO,2,PENTYNE WITH HYDRAZINE -U-  
AUTHOR-(03)-[UFFE, B.V., ARTSYBASHEVA, YU.P., LEVINA, L.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 908-11  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CYCLIZATION, CHLORINATED ORGANIC COMPOUND, ORGANIC AZO  
COMPOUND ALKYNE, HYDRAZINE, CHEMICAL SYNTHESIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/1334 STEP NO--UR/0366/70/000/009/0908/0911  
CIRC ACCESSION NO--AP0135008

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135006

ABSTRACT/EXTRACT--(U) CP-C- ABSTRACT. THE TITLE REACTION GAVE LESS THAN  
OR EQUAL TO 80PERCENT 3,5-DIMETHYL,DELTA PRIME2, PYRAZOLINE, A SMALL  
AMT. OF 3,ETHYL,DELTA PRIME2, PYRAZOLINE, AND TRACES OF NEC(:NNH SUB2)  
CH:CHME (1). THE REACTION INVOLVES THE INITIAL FORMATION OF NEC(:NNH  
SUB2)C TRIPLE BOND CME, WHICH REARRANGES PREDDOMINATELY TO H SUB2  
C:CHC(:NNH SUB2) ET AND IN A LESSER DEGREE TO 1. THE CYCLIZATION OF  
THESE INTERMEDIATES GIVES THE PRODUCTS. FACILITY: Leningrad.  
GOS. UNIV., Leningrad, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--090CT70  
TITLE--STABILITY IN SOLUTIONS OF COMPOUNDS OF NICKEL WITH AMINES -U-

AUTHOR--(02)--FRIDMAN, YA.D., LEVINA, M.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 687-92

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NICKEL COMPLEX, SPECTROPHOTOMETRIC ANALYSIS, PRIMARY AMINE,  
EQUILIBRIUM CONSTANT, ETHYLENEDIAMINE, QUINOLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1992/1866

STEP NO--UR/0076/70/015/003/0687/0692

CIRC ACCESSION NO--AP0112846

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--09OCT70  
 CIRC ACCESSION NO--AP0112846  
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX FORMATION CONSTS. OF  
 (NI(ET SUB2 NH) SUBM.(NH SUB3) SUBP (PY) SUBQ) PRIME2 POSITIVE (M EQUALS  
 1, 2, OR 3; P PLUS Q EQUALS 4 MINUS M), (NIPH SUB2 DIPY) PRIME2 POSITIVE,  
 (NI L EN) PRIME2 POSITIVE, (NI L EN SUB2) PRIME2 POSITIVE AND (NI L SUB2  
 EN) PRIME2 POSITIVE (L EQUALS PH OR DIPY; DIPY EQUALS DIPYRIDYL) WERE  
 DETD. BY DISTRIBUTION COEFF., PH TITRN., AND SPECTROPHOTOMETRIC METHODS  
 AND THE RESULTS ARE TABULATED. EQUIL. CONSTS. (K) FOR THE REACTIONS OF  
 BZNH SUB2, QUINOLINE, OR PHNH SUB2 WITH NI COMPLEXES OF O PHENANTHROLINE  
 OR ETHYLENEDIAMINE WERE DETD. SPECTROPHOTOMETRICALLY. K FOR THE  
 REACTIONS OF THE FORMATION OF MIXED COMPLEXES (CONTG. ALIPHATIC AND  
 AROMATIC OR HETEROCYCLIC AMINES) HAVE LOWER VALUES THAN DO K FOR AMINO  
 COMPLEX FORMATION INVOLVING ONE TYPE OF AMINE ONLY. FACILITY:  
 INST. NEORG. FIZ. KHIM., FRUNZE, USSR.

UNCLASSIFIED



USSR

UDC 616.981.25-092.9-085.371-039.71]-092

LEVINA, M. N., and KHOMENKO, I. M., Rostov-na-Donu Institute of Epidemiology Microbiology, and Hygiene

"The Effect of Some Vaccines on the Course of Experimental Staphylococcal Infection"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 68-72

Abstract: Nonspecific sensitization of mice and rabbits with whooping cough and BCG vaccines, respectively, considerably aggravated the course of infection produced by a mixture of virulent Staphylococcal strains whether the Staphylococci were inoculated simultaneously or several days after injection of the vaccine. Phagocytosis was markedly depressed and over half the mice died (compared with 20 to 30% in the control). However, a single immunization of mice with typhoid vaccine had no appreciable effect on the course or outcome of infection with Staphylococci.

1/1

USSR

UDC: 621.317.8

KAZARIN, R. N., LEVINA, M. N., MUTSYANKO, Ye. P.

"Miniature Fixed Resistors"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 25-28 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V305)

Translation: The authors describe type S5-39 fixed wire-wound resistors. Their principal characteristics are given and a method is presented for potting with epoxy compound. Resumé.

1/1

USSR

UDC 669.725:621.785.7:539.31

LOKSHIN, I. KH., KHENKIN, M. L. and LEVINA, N. K.

"Changes in the Resistance of Beryllium to Microplastic Deformations With Aging"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1972, pp 54-55

Abstract: This study concerns the effect of aging on the elastic limit and relaxation resistance of beryllium produced by sintering the powder with a particle diameter of 56 $\mu$ . The experimental materials included both technical-grade hot-formed and distilled extruded beryllium; the iron content in the latter was by almost one order of magnitude lower than in the technical-grade while the aluminum contents were equal. Both the technical and distilled beryllium specimens exhibited their maximum resistance to microplastic deformation after aging at 500° and 400°C, respectively. The effect of aging and precipitation hardening in beryllium appears to be a function of its iron content. (2 illustrations, 5 bibliographic references).

1/1

USSR

UDC 669.725:620.172.2

KHENKIN, M.L., LOKSHIN, I.KH., LEVINA, N.K., and AKOPOV, I.A.

"Increasing the Resistance of Beryllium to Microplastic Deformations by Thermo-cyclic Treatment

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 7, 1971, pp 50-52

Abstract: A study was made of a method of improving beryllium's resistance to microplastic deformations by using a stabilizing treatment (t t s o) consisting of several cycles of cooling ( $-50^{\circ}$ ,  $-72^{\circ}$ , and  $-196^{\circ}\text{C}$ ) followed by low-temperature heating ( $+100^{\circ}$  and  $+400^{\circ}\text{C}$ ). The results show that the relaxation stability increases 2 times with a temperature interval from  $-50^{\circ}$  to  $+100^{\circ}\text{C}$ , and increases further with an increasing temperature interval. The efficiency of treatment with an increasing number of cycles, practically speaking, does not increase after three cycles. Macro stresses also decrease with increasing relaxation stability. The observed increase in beryllium resistance to microplastic deformations is explained by processes of high-speed relaxation of micro stresses occurring at thermal cycling in overstressed microvolumes and by stabilization of thin structure in these volumes. It is assumed that the effect of the described treatment may be obtained on other metals and alloys with hexagonal lattice.

1/1

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--EFFECT OF COLCEMID ON THE CHROMOSOMES OF HUMAN CELLS IN VITRO -U-  
AUTHOR--(02)-KAKPAKOVA, YE.S., LEVINA, N.V.  
COUNTRY OF INFO--USSR  
SOURCE--TSITOLOGIYA 1970, 12(3), 382-6  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--CELL CULTURE, CHROMOSOME, MITOSIS, HAMSTER  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/0454 STEP NO--UR/9053/70/012/003/0382/0386  
CIRC ACCESSION NO--AP0117690  
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117690

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. COLCEMID AT 0.01-0.03 MU G-ML  
CULTIVATED FOR 48-72 HR ON DIPLOID AND ANEUPLOID HUMAN CELLS IN VITRO  
COMPLETELY OR PARTIALLY PULVERIZED CHROMOSOMAL MATERIAL FROM THE  
POLYPLOID CELLS. THERE WAS NO DIFFERENTIAL INHIBITION OF MITOTIC  
SPIRALIZATION IN THE INDIVIDUAL POLYPLOID HUMAN CELLS SUCH AS IS KNOWN  
IN CHINESE HAMSTER CELLS. FACILITY: LAB. CYTOGENET., INST. EXP.  
CLIN. ONCOL., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: **AP0053439** - Abstracting Service:  
CHEMICAL ABST.

Ref. Code:  
**UR 0366**

15/70

111153h Aromatic hydrocarbons. XXXIX. 5,12-Diphenyl-1,2:3,4-dicycloalkano-6,11-benzo-6,11-dihydrotetracenes. Skvarchenko, V. R.; Shil'nikova, A. G.; Levina, R. Ya. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Zh. Org. Khim.* 1970, 6(1), 178-80 (Russ). The redn. of 1,2:3,4-dicyclohexano-6,11-benzo-1,4,6,11,13,14-hexahydrotetracene-5,12-dione or 1,2:3,4-dicyclopentano-6,11-benzo-1,4,6,11,13,14-hexahydrotetracene-5,12-dione with PhLi at -5 to 0° gave the corresponding 5,12-diphenyl-5,12-dihydroxy derivs. which were dehydrated in boiling EtOH contg. HCl to 5,12-diphenyl-1,2:3,4-dicyclohexano-6,11-benzo-1,4,6,11-tetrahydrotetracene (I) or 5,12-diphenyl-1,2:3,4-dicyclopentano-6,11-benzo-1,4,6,11-tetrahydrotetracene (II). The aromatization of I or II by heating with Pd-C catalyst gave 5,12-diphenyl-1,2:3,4:6,11-tribenzo-6,11-dihydrotetracene or 5,12-diphenyl-1,2:3,4-dicyclopentano-6,11-benzo-6,11-dihydrotetracene. CPJR

mm

4

REEL/FRA  
19830464

7

1/2 008 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--AROMATIC HYDROCARBONS. XXXVIII. HYDROCARBONS OF THE ANTHRACENE  
SERIES IN DIENE SYNTHESIS -U-  
AUTHOR-(04)-SKVARCHENKO, V.R., SHILNIKOVA, A.G., ZAKHAROVA, G., LEVINA,  
R.YA.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(1), 174-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ANTHRACENE, AROMATIC HYDROCARBON, DIENE, CONDENSATION  
REACTION, QUINONE, MALEIC ANHYDRIDE, HYDROCARBON SYNTHESIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1995/1467 STEP NO--UR/0366/70/006/001/0174/0177  
CIRC ACCESSION NO--AP0116904  
UNCLASSIFIED



2/2 008

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116904

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF 2,3-DIMETHYLANTHRACENE (I) WITH MALEIC ANHYDRIDE (II) OR RHO BENZOQUINONE (III) GAVE ONLY 9,10,ADDN. PRODUCTS: 2,3-DIMETHYL,9,10,(DICARBOXYETHANO),9,10,DIHYDROANTHRACENE ANHYDRIDE (IV) OR 2,3-DIMETHYL,1 PRIME,2 PRIME,DIHYDRO,3 PRIME,6 PRIME,TRIPTYCENEQUINONE (V). SIMILARLY, WHEN 2,3,6,7,TETRAMETHYLANTHRACENE (VI) OR 2,3-DIMETHYLCYCLOHEX(6,7)ANTHRACENE (VII) WERE REACTED WITH II OR III THE CORRESPONDING 2,3,6,7,TETRAMETHYL DERIV. OF IV AND V, ANHYDRIDE OF 2,3-DIMETHYL,9,10,(DICARBOXYETHANO),6,7,CYCLOHEXANO,9,10,DIHYDROANTHRACENE, OR 2,3-DIMETHYL,2 PRIME, 3 PRIME,DIHYDROQUINONE(3 PRIME,2 PRIME,9,10)CYCLOHEXANO(6,7),9,10,DIHYDROANTHRACENE WERE OBTAINED. THE REACTION OF IV OR ITS 2,3,6,7,TETRAMETHYLDERIV. WITH H SUB2 C:CMCME:CH SUB2 GAVE 2,3,6,7,TETRAMETHYLTRICYCLO(2.2.2.2)TETRADECA2,5(7),DIEN,9,10,DIONE. THE REACTION OF I, VI OR VII WITH O,H SUB2 NC SUB6 H SUB4 CO SUB2 H,AMYL LITHIUM MIXT. (WHICH FORMS BENZYNE) GAVE 2,3-DIMETHYLTRIPTYCENE, 2,3,6,7,TETRAMETHYLTRIPTYCENE, OR 2,3-DIMETHYLCYCLOHEXANO(6,7)TRIPTYCENE AS WELL AS THE CORRESPONDING 8,9,SUBSTITUTED,5,12,ETHANO,5,12,DIHYDRONAPHTHACENES OR 8,9,SUBSTITUTED,5,12,DIMETHYLETHENO,5,12, DIHYDRONAPHTHACENES. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--POSSIBLE ABSORPTION OF HYDROGEN SULFIDE, ESCAPING DURING THE  
VULCANIZATION OF EBNITE MIXTURES, USING ZEOLITES -U-  
AUTHOR--(05)-KOCHANOVA, O.M., BLOKH, G.A., KOKHAN, F.S., STRELOK, I.M.,  
LEVINA, S.A.  
COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(3), 15-17

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--EBNITE, VULCANIZATION, HYDROGEN SULFIDE, ZEOLITE, SYNTHETIC  
RUBBER/(U)SKMS50P SYNTHETIC RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/0543

STEP NO--UR/0138/70/029/003/0015/0017

CIRC ACCESSION NO--AP0119462

UNCLASSIFIED

272 - 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119462

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADDN. OF 8 WT. PARTS ZEOLITES FENAX 2 OR FENAY 3 TO EBUNITE (BASED ON SYNTHETIC RUBBER SKMS 50P 100 AND S 40 PARTS) DECREASED THE EVOLUTION OF H SUB2 S DURING VULCANIZATION AT 170DEGREES BY UP TO 60PERCENT. OTHER COM. ZEOLITES (NACDX, FECAA 3, NAX) HAD CONSIDERABLY LOWER H SUB2 S ABSORPTION ABILITY.  
FACILITY: SVERDLOVSK, FILIAL NAUCH.-ISSLED. INST. REZIN. PROM.,  
SVERDLOVSK, USSR.

USSR

UDC 533.6.013.42

LEVINA, S. M.

"Study of the Effect of the Pliability of an Edge on the Spectrum of Pressure Acting on It From a Uniform Turbulent Flow"

V sb. Dinamika gidrotekhn. sooruzh. (Dynamics of Hydraulic Engineering Equipment -- Collection of Works), Moscow, 1972, pp 21-25 (From RZh-Mekhanika, No 3, Mar 73, Abstract No 3V408)

Translation: Experimental data indicate a considerable distortion in the elastic edge of the initial spectrum of the pressure of a turbulent flow, i.e., the pressure acting on a rigid edge. The paper can be considered as the first stage in a detailed theoretical analysis.

1/1

- 2A -

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CLINICAL TRIALS OF CHLORACIZIN IN ISCHEMIC CARDIAC DISEASE -U-  
AUTHOR--(05)--LEVINA, IS.A., ROMANOVSKAYA, A.I., DMITRIYEVA, I.I.,  
KONGVALENKO, A.V., SIVOKONEVA, N.A.  
COUNTRY OF INFO--USSR  
SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 69-72  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART DISEASE, ATHEROSCLEROSIS, ARTERY, DRUG TESTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3002/1685

STEP NO--UR/0475/70/000/004/0069/0072

CIRC ACCESSION NO--AP0129055

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129055

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHLORACIZIN WAS EMPLOYED IN 70 PATIENTS WITH CHRONIC CORONARY INSUFFICIENCY AND IT WAS FOUND THAT THIS DRUG IS ONE OF THE METHODS OF CHOICE IN THE TREATMENT OF ISCHEMIC CARDIAC DISEASE, DUE TO ATHEROSCLEROSIS OF THE CORONARY ARTERIES.  
FACILITY: ODESSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC 621.355.8.035.2

LEVINA, V. I.

"Processes Operating on the Cadmium Electrode in Alkali Solutions (Review Survey of Articles Published Between 1966 and 1970)"

Sb. rabot no khim. istochnikam toka. Vses. n.-n akkumulyator. in-t (Collection of Works on the Chemical Source of Current. All-Union Scientific Study Institute for Storage Batteries), Vyp 7, 1972, pp 138-145 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1972, Abstract No 8L 31)

Translation: The major problems and results of studies devoted to the electrochemical and physico-chemical properties of cadmium electrodes in alkali solutions are presented. Articles published in the literature during the period 1966-1970 are reviewed. (Author's abstract).

1/1

1/2 006 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--EFFECT OF GIBBERELLIN AND THE RETARDANT CCC ON DROUGHT HARDINESS OF  
BARLEY -U-  
AUTHOR--(02)-BADANOVA, K.A., ~~LEVINA, V.V.~~  
COUNTRY OF INFO--USSR  
SOURCE--FIZIOLOGIYA RASTENIY, 1970, VOL 17, NR 3, PP 568-574  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--GIBBERELLIC ACID, CHLORIDE, PLANT GROWTH REGULATOR,  
PROTOPLASM, PIGMENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1999/1135 STEP NO--UR/0326/70/017/003/0568/0574  
CIRC ACCESSION NO--AP0123124  
UNCLASSIFIED



2/2 006

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123124

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BARLEY PLANTS WERE CULTIVATED FROM DROUGHT HARDENED AND UNHARDENED SEEDS IN VEGETATION EXPERIMENTS (SOIL CULTURE), THE SOIL MOISTURE LYING BETWEEN 40 AND 70PERCENT OF THE TOTAL WATER CAPACITY. THREE LEAF PLANTS WERE SPRAYED THREE TIMES AT INTERVALS OF 7 DAYS WITH A 0.01PERCENT GIBBERELLIN SOLUTION (35 ML PER 10 PLANTS) OR WATERED WITH A 0.5PERCENT CCC SOLUTION (100 MIL OF CHLOROCHOLINCHLORIDE PER KILOGRAM SOIL). THE GROWTH AND DEVELOPMENT, WATER CONTENT AND VISCOSITY OF PROTOPLASM, PIGMENT CONTENT, HEAT RESISTANCE AND GRAIN YIELD WERE STUDIED. IRRESPECTIVE OF WATER SUPPLY OF THE PLANTS, GIBBERELLIN STIMULATED GROWTH AND ACCELERATED DEVELOPMENT OF THE PLANTS; THE RETARDANT EXERTED AN OPPOSITE EFFECT. GIBBERELLIN LOWERS THE AMOUNT OF PLASTIDS IN THE CELLS AND ALSO THE PIGMENT CONTENT. THE WATER CONTENT OF THE CELLS AND PROTOPLASM VISCOSITY DID NOT CHANGE. THE RETARDANT INCREASED THE NUMBER OF PLASTIDS IN THE CELLS AND THE PIGMENT CONTENT AND AMOUNT OF BOUND WATER BUT LOWERED THE PROTOPLASM VISCOSITY. THE CCC RETARDANT ALSO SLIGHTLY INCREASED THE DROUGHT RESISTANCE, WHEREAS GIBBERELLIN LOWERED THE HEAT AND DROUGHT RESISTANCE OF THE PLANTS. FACILITY: K. A. TIMIRIAZEV INSTITUTE OF PLANT PHYSIOLOGY, USSR ACADEMY OF SCIENCES, MOSCOW.

UNCLASSIFIED

I. B. LEVENSHTEYN

Acc. Nr:

AP0049140

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

UR0079

100851h Products of the reaction of triphenylarsine sulfide with alkyl halides. Chernokai'skii, B. D.; Levenshteyn, I. B.; Kamai, G. (Kazan. Khim.-Tekhnol. Inst. im. Kirova, Kazan, USSR). *Zh. Obshch. Khim.* 1970, 40(1), 148-51 (Russ). Refluxing  $\text{Ph}_3\text{AsS}$  in  $\text{MeI-Me}_2\text{CO}$  15.5 hr gave, after washing with cold  $\text{EtOAc}$ , a residue of 10.7%  $\text{Ph}_2\text{MeAsI}$ , m.  $175^\circ$ , and 34%  $\text{Ph}_2\text{MeAsI}$ , (I) m.  $108-9^\circ$ . Similar reaction with  $\text{EtI}$  in  $\text{Me}_2\text{CO}$  gave 41.4%  $\text{Ph}_2\text{EtAsI}$ , m.  $125-6^\circ$  and 4.5%  $\text{Ph}_2\text{EtAsI}$ , m.  $157-8^\circ$ ; on some occasions 5%  $\text{Ph}_2\text{As}$  was formed. Reaction with  $\text{PrI}$  51 hr gave 24.3%  $\text{Ph}_2\text{PrAsI}$ , m.  $168^\circ$ . I heated with  $\text{Hg}$  in  $\text{Me}_2\text{CO}$  7 hr gave 22.8 g  $(\text{Ph}_2\text{MeAs})_2\text{HgI}$ , m.  $168-70^\circ$  (cf. Baig, *et al.*, 1962), and more sol.  $\text{Ph}_2\text{AsMe.HgI}$ , m.  $138-9^\circ$ . Similar treatment of  $\text{Ph}_2\text{EtAsI}$  gave 87.5%  $\text{Ph}_2\text{EtAs.HgI}$ , m.  $106^\circ$ . Similarly was prepd.  $\text{Ph}_2\text{PrAs.HgI}$ , m.  $97^\circ$ .

G. M. Kosolapoff -/

REEL/FRAME  
19800946

USSR

Infrared Rays

UDC: 621.382.2

GREKHOV, I. V., LEVINSHTEYN, M. Ye., L'VOVA, T. V., OTBLESK, A. Ye.  
and SERBIN, A. I., A. F. Ioffe Physico-Technical Institute, Lenin-  
grad

"Silicon Injection Modulator of Infrared Radiation"

Leningrad, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp  
1327-1334

Abstract: This paper describes experiments for investigating silicon injection modulators and discusses methods for computing injection modulators operating in the pulse mode. The experimental equipment uses a CO<sub>2</sub> laser of the OKG-15 type, with a wavelength of 10.6  $\mu$ , the beam incident on the face of the silicon specimen. The transmitted beam falls on a photosensitive device, and the signal from the latter is applied to a microvoltmeter of the V6-2 type, in the d-c mode, or to a pulse amplifier and thence to an oscillograph, in the pulse mode. Rectangular pulses are applied to the specimen. A block diagram of the apparatus and an explanation of the experimental procedures are given. Curves are plotted for the modulation coefficient as a function of the d-c current density in different types of specimens under various conditions,  
1/2

USSR

UDC: 621.382.2

GREKHOV, I. V., et al, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp 1327-1334

the coefficient being calculated from the formula  $K = (I_0 - I_J)/I_0$ , where  $I_0$  is the signal recorded by the microvoltmeter with no current, and  $I_J$  is the signal for a specified current density. It is found that the rate of growth of the coefficient with time is not determined by the reactances in the circuit but by the modulation of the resistance in the diode specimen base through the injected carriers. In the theory section of this paper, the results of the experiments are discussed on the basis of a model according to which the current through the diode remains constant during the time of the pulse.

2/2

- 27 -

USSR

UDC 541.138

LEVINSKAS, A. L., SINYUS, Ya. Yu., and INGAUNITE, B. I., Vilnyus State University

"Electrode Processes in Ether-Hydride Electrolyte Used in Aluminum Plating"

Moscow, Elektrokimiya, Vol 6, No 10, Oct 70, pp 1505-1508

Abstract: A study of the electrode processes in the "hydride mixture" was performed by the classical polarization curve method, and also by gas chromatography and gas volumetric methods. The systematic study of the current yield under gas separation conditions confirmed the complexity of the mechanism of cathode and anode gas liberation in the ether-hydride electrolyte. The gas volumetric data indicated that the cathode and anode hydrogen in the ether-hydride electrolyte can hardly be related to the various types of ionization of compounds in the "hydride mixture." It is possible that gas separation on the cathode and anode may be a result of spontaneous separation of hydrogen under the influence of the freshly formed aluminum surface, which catalyzes the process of decomposition of complexes in the "hydride mixture."

1/1

USSR

UDC 546.78:620.172.2

CHUBAROV, V. M., LEVINSKIY, YU. V., SALIBEKOV, S. YE., TREFILOV, A. F., GRACHEV, L. V., RODIN, YE. M., LEVINSKAYA, M. KH., DVOYCHENKOVA, L. V., Moscow

"Heat-Resistant Composition Material Based on Nickel"

Kiev, Problemy Prochnosti, No 7, 1971, pp 100-104

Abstract: Results are presented from development of the VKM-1 composition material constructed on the basis of the heat-resistant ZhS6-K nickel alloy reinforced with tungsten wire. Data are presented from metallographic and micro-radiographic studies of the compatibility of the matrix with the fiber indicating insignificant interaction of the ZhS6-K alloy with the tungsten even after holding for 100 hours at a temperature of 1,200° C.

1/1

Superalloys

USSR

UDC 669.24'298:620.185.5

BABICH, B. N., LYUKEVICH, V. I., LEVINSKAYA, M. KH. and ROMASHOV, V. M.

"Recrystallization of Nickel Strengthened With Thorium Dioxide"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1972, pp 36-40

Abstract: The study deals with the recrystallization of nickel strengthened with thorium dioxide following cold drawing and anneals of extruded metal powder rods. The material's composition was 96.89% Ni; 2.81% ThO<sub>2</sub>; 0.07% C; 0.008% S; 0.003% P; 0.08% Fe; 0.037% Cu. Precipitation-hardened nickel has an extremely stable structure which explains the preservation of a considerable strengthening effect as a result of cold drawing after high-temperature annealing. The material features a wide temperature interval between the recovery occurring at 400-600°C and the recrystallization which develops at 1200-1400°C. On recrystallization, the precipitation-hardened nickel develops a structural inhomogeneity which is stable up to 1400°C. The amount of large recrystallized grains is governed by the preliminary deformation ratio and annealing temperatures. An increase in cold deformation activates the recrystallization of nickel strengthened with ThO<sub>2</sub>.

1/2

USSR

BABICH, B. N., et al, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1972, pp 36-40

However, higher deformation ratios (83%) suppress the formation of large recrystallized grains. (3 illustrations, 2 tables, 11 bibliographic references).

2/2



Aluminum and Its Alloys

USSR

UDC 546.171.1'621

PORTNOY, K. I., GRIBKOV, V. N., ISAYKIN, A. S., SHCHETANOV, B. V., and LEVINSKAYA, M. KH.

"The Role of Liquid Drops in the Growth of Aluminum Nitride Whiskers"

Moscow, Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 10, Oct 70, pp 1762-1767

Abstract: No theoretical or experimental proof has yet been obtained as to the possibility of the growth of refractory-compound whiskers by the "vapor-liquid-solid phase" mechanism, and there are contradictory views concerning the role of liquid drops in their growth. Therefore, the authors undertook to elucidate the need for the presence of liquid drops for the growth of refractory-compound whiskers, as well as to study the mechanism of their participation in such growth. Aluminum nitride whiskers were used for the study. The whiskers were grown by two methods, viz. (1) reduction of aluminum oxide in the presence of nitrogen and (2) nitriding of aluminum. Experiments showed that the growth of the AlN whiskers according to both reactions is always

1/2

USSR

PORTNOY, K. I., et al., Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 10, Oct 70, pp 1762-1767

accompanied by the formation of "drops." Electron diffraction and X-ray studies showed that the composition of the "drops" was identical to that of the whiskers, i. e., they were spheres of aluminum nitride. Condensation of liquid aluminum drops is a necessary condition for the growth of AlN whiskers. It is unlikely that whiskers of AlN and other similar compounds grow by the "vapor-liquid-solid phase" mechanism. It is more probable that the aluminum drops are crystallization centers.

2/2

USSR

UDC 541.183

MARTYNOV, G. A., IVANOV, I. B., LEVINSKIY, B. N., and ANEVA, N. I.

"Statistical Theory of Monomolecular Adsorption. IV. Monomolecular Adsorption on the Crystal Surface"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 47, No 1, Jan 73, pp 140-144

Abstract: Using the Arinshteyn equation, an isotherm of localized Frumkin-Fauler-Guggenheim adsorption was obtained and the limits of its applicability were analyzed. The adsorption on the surface of a real crystal was analyzed and an isotherm was obtained which was correct for the degree of filling  $\tau \leq 0.2-0.3$ . The relationship of  $\tau$  to the attraction energy between adsorbate-adsorbent, to the ratio of molecular diameter of the adsorbate to the lattice parameters, etc. were studied. It was shown that at  $\tau \leq 0.2-0.3$  it is practically impossible to distinguish the localized and nonlocalized adsorption on the basis of the adsorption isotherm.

1/1

- 3 -

USSR

UDC 630:54:541.571.9:547.871

TIBANOV, P. V., VASIL'YEV, A. F., BASKAKOV, Yu. A., LEVINSKIY, B. N., and  
MEL'NIKOVA I. A., All-Union Scientific-Research Institute of Chemical  
Agents for Plant Protection

"Herbicidal Derivatives of Hydroxylamine. XL. Energy of the Intramolecular  
Hydrogen Bond, and the Structure of Associates of O-Methylhydroxylamine  
Derivatives of sym-Triazines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 1972, pp 124-127

Abstract: Experimental data have already suggested that simplification of  
methods and calculations for finding both the energy of the intramolecular  
bond, and the dimer-monomer entropy difference, will not substantially affect  
the accuracy of the results. Using the temperature relationship of the  
equilibrium constants, as determined by the ebullioscopic and cryoscopic  
methods, the authors determined both of the constants in question for seven  
compounds of the symtriazine group. Also obtained were the infrared spectrum  
for a solution of 2-chlor-4-di-propylamino-6-methoxyamino-sym-triazine in  
hexachlorobutadiene, and the relationship between (1) the association factor  
( $f = \bar{M}/M$ , where  $\bar{M}$  is the measured molecular weight, and  $M$  is the molecular  
weight of the monomer, and (2) the molar concentration. Figures for the  
1/2

USSR

TIBANOV, P. V., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 1,  
Jan 1972, pp 124-127

intramolecular H bond energy and the dimer-monomer entropy difference turned out to be very close to those obtained by the accurate method of "peak" band intensities. The various data obtained are summarized in tables and graphs.

2/2

- 39 -

1/2 020  
TITLE--VINYL FLUORIDE -U- UNCLASSIFIED PROCESSING DATE--11SEP70  
AUTHOR--KORINKO, V.A., LEVINSKIY, M.I., CHAYKA, YE.A., ENGLIN, A.L.  
COUNTRY OF INFO--USSR  
SOURCE--USP. KHIM. 1970, 39(1), 94-111  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--VINYL COMPOUND, FLUORINATED ORGANIC COMPOUND, POLYMER PHYSICAL  
PROPERTY, POLYMERIZATION, POLYVINYL FLUORIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1984/1696 STEP NO--UR/0074/70/039/001/0024/0111  
CIRC ACCESSION NO--AP0100293  
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70  
CIRC ACCESSION NO--AP0100293  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW WITH 299 REFS DESCRIBING  
THE PREPN., PROPERTIES, POLYMN, AND COPOLYMN, OF VINYL FLUORIDE. THE  
PROPERTIES AND USES OF POLY (VINYL FLUORIDE) ARE ALSO DESCRIBED.

UNCLASSIFIED

0123

USSR

UDC 669.71

LEVINSKIY, YU. V., CHUBAROV, V. M., ROMANOVICH, I. V., and DVOYCHENKOVA, L. V.

"Interaction of Tungsten and Molybdenum Wires With Nickel in the Composite Material"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar/Apr '73, pp 113-119

Abstract: Composite samples were prepared by hot pressing of nickel powder (carbonyl nickel) with either tungsten or molybdenum wire at 1000°C for 1-2 min. Samples prepared in this way were subjected to annealing in vacuum ( $\sim 1 \cdot 10^{-4}$  mm Hg) at 1100-1250°C up to 100 hours. No interaction was detected between W or Mo wires with Ni powder immediately after pressing. However, a wide interaction zone produced by diffusion processes was present in all samples after annealing. In the case of tungsten the diffusion zone contained a solid solution of W in Ni, and in the case of Mo, a solid solution of Mo and Ni and an intermetallide layer. However, if wires were not carefully cleaned from the graphite lubricant, the contact zone contained up to three layers of complex carbides. The x-ray spectral analysis of the concentration of W and Mo in carbide layers and their microhardness indicated that their number and composition depends on heat treatment and on the extent of graphite impurity on the wires. The maximum concentration of W and Mo in the solid

1/2



USSR

LEVINSKIY, YU. V., et al., Fizika i Khimiya Obrabotki Materialov, No 2, Mar/Apr 73, pp 113-119

solution layer within the contact zone was  $\sim 38$  and  $\sim 36\%$ , respectively, regardless of the presence or absence of carbide layers. The diffusion coefficient of W in Ni at 1100 and 1200°C was  $(6.0 \pm 1.0) \cdot 10^{-12}$  and  $(3.1 \pm 0.5) \cdot 10^{-11}$ , respectively. For Mo it was  $(3.1 \pm 0.95) \cdot 10^{-11}$ ,  $(5.7 \pm 1.0) \cdot 10^{-11}$ , and  $(9.4 \pm 1.5) \cdot 10^{-11}$  at 1100, 1200, and 1250°C, respectively. Diffusion of Ni in W and Mo was negligible because of very low solubility of Ni in these metals.

2/2

- 12 -

Superalloys

USSR

UDC 546.78:620.172.2

CHUBAROV, V. M., LEVINSKIY, YU. V., SALIBEKOV, S. YE., TREFILOV, A. F., GRACHEV, L. V., RODIN, YE. M., LEVINSKAYA, M. KH., DVOYCHENKOVA, L. V., Moscow

"Heat-Resistant Composition Material Based on Nickel"

Kiev, Problemy Prochnosti, No 7, 1971, pp 100-104

Abstract: Results are presented from development of the VKM-1 composition material constructed on the basis of the heat-resistant ZhS6-K nickel alloy reinforced with tungsten wire. Data are presented from metallographic and micro-radiographic studies of the compatibility of the matrix with the fiber indicating insignificant interaction of the ZhS6-K alloy with the tungsten even after holding for 100 hours at a temperature of 1,200° C.

1/1

Miscellaneous

USSR

UDC 669.26/29:621.785.532

KIPARISOV, S. S., and LEVINSKIY, YU. V.

Azotirovaniye tugoplavkikh metallov (Nitriding High-melting Metals), Moscow, Metallurgiya, 1972, 160 pp

Translation of Annotation: Nitriding problems are examined for high-melting metals (titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, and tungsten). Data are presented on the equilibrium state in nitride -- metals systems, on nitriding kinetics, on properties of nitrided products, and on the technology of nitriding.

Analytic methods are given for calculating the speed of formation of various nitride layers, and data are systematized on the constants of nitriding processes, and on diffusion coefficients of nitrogen in various nitrides and metals. Practical regimens are presented for the nitriding of high-melting metals, and areas of application for nitrided products are described.

The book is intended for scientific workers and designers and engineers specializing in metal science and the metallurgy of rare metals. It also may be useful to students and graduate students in metallurgical schools of higher education. 91 figures, 50 tables, 198 bibliographic citations.

1/2

USSR

KIPARISOV, S. S., and LEVINSKIY, YU. V., Nitriding High-melting Metals,  
Moscow, Metallurgiya, 1972, 160 pp

Table of Contents:

Foreword	Page 3
I. Equilibrium in High-Melting Metal-Nitrogen Systems	5
II. Kinetics of Saturation of High-Melting Metals with Nitrogen	16
1. Methods of Calculating Nitriding Speed	16
2. Experimental Values of Nitriding Parameters	29
3. Internal Nitriding of Alloys Based on High-Melting Metals	73
III. Properties of Solid Solutions of Nitrogen in High-Melting Metals and of Nitride Phases	85
IV. Technology of Nitriding High-Melting Metals	107
V. Properties of Nitrided Products	116
Bibliography	154

2/2

- 38 -

USSR

UDC: 621.317.73(088.8)

TIKHOMIROV, V. P., ELVINSON, B. A., KISELEV, I. B., SHELKOVNIKOV, A. A., and DVORYANICHNIKOV, I. A.

"Automatic Device for Measuring the Input Resistance of a Long Line"

/N.-i. in-t teploenerg. priborostr. / Avt. sv. USSR (Scientific Research Institute of Thermal Energy and Instrument Manufacture, Author's Certificate USSR) Class 21a<sup>4</sup>, 74, (GOL r 27/04), No. 270842, Application 21.08.68, Publication 29.08.70 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A388P)

Translation: An automatic device is proposed for measuring the input resistance of a long line, containing a UHF oscillator, a modulator, a detector, an amplifier, a phase-sensitive rectifier, and a compensating parametric controlling element. The proposed measuring device is distinguished in that, with the purpose of improving the accuracy of measurement, a parametric controlling element is connected in series with the measured section of the line. L. L.

1/1

Automatic Control Instruments & Systems

USSR

UDC 62-551.454

YALYSHEV, A. U., LEVINSON, B. A.

"Method of Constructing Electrical Analog Proportional-Integral-Differential Control Devices with Mutually Independent Dynamic Parameter Tuning Devices"

Pribory i Sistemy Upravleniya No. 7, 1970, pp 23-27

Abstract: Electrical analog control devices forming the command signal on the basis of the standard proportional-integral-differential (PID) rule are generally based on one operational amplifier with a high impedance input. Feedback loops contain passive RC-quadrupoles with ID links. Since these links are not detecting links for interrelated RC circuits, the problem of creating analog regulating devices with channels for adjusting the proportional, integral, and differential components which are invariant with respect to each other has not yet been solved. The solution of the problem of providing independence of the channels requires further improvement of the principles of design of analog control devices based on operational amplifiers with RC feedback. Structural diagrams of

1/2

USSR

YALYSHEV, A. U., LEVINSON, B. A., *Pribory i Sistemy Upravleniya*, No. 7, 1970, pp 23-27

analog control devices based on an operational amplifier with the minimum number of controlled R and C feedback elements are presented. The primary distinguishing feature of these devices is that the input signal is fed to the feedback loop both through the output circuit of the operational amplifier and through the R and C elements not connected to the adding point, and the regulating device of the resistors and condensers in the feedback loop are rigidly connected to each other in pairs. The devices are analyzed to show that the introduction of additional coupling of the input signal, potentiometric bridges with a compensation channel, and the doubling of the adjustment of the R and C elements are effective means of producing broad-range, independent adjustment of dynamic parameters. This method has been used in the development of a number of regulating devices and can be practically used in planning new PID regulators based on electrical, pneumatic, and hydraulic operational amplifiers.

1/2 045

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--THERMAL REGIME OF A PULSED CO2 LASER -U-

AUTHOR--(03)-YELETSKIY, A.V., LEVINSON, G.P., SVIRIDOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, MAR. 1970, P. 543-546

DATE PUBLISHED---MARTO

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CARBON DIOXIDE LASER, MOLECULE, GASEOUS STATE LASER, PULSE  
EXCITATION, GAS RELAXATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1989/1020

STEP NO--UR/0368/70/012/000/0543/0546

CAT ACCESSIO. NO--AP0107534

UNCLASSIFIED



UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 045

CIRC ACCESSION NO--AP0107534

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. CALCULATION OF THE LIFETIME OF THE UPPER LASER LEVEL OF THE CARBON DIOXIDE MOLECULE, TAKING INTO ACCOUNT GAS HEATING DURING RELAXATION OF THIS LEVEL. IT IS FOUND THAT THIS TIME PRACTICALLY COINCIDES WITH THE RELAXATION TIME OF THE GAS TEMPERATURE AND THEREFORE DEPENDS ON THE PULSE ENERGY DURING PULSED EXCITATION OF A CARBON DIOXIDE LASER. THE RESULTS OF THE CALCULATION ARE COMPARED WITH EXPERIMENTAL DATA.

UNCLASSIFIED

Thin Films

USSR

UDC 535.241.4

LEVINSON, G. R., and SMILGA, V. I., Moscow

"Experimental Investigation of the Failure Threshold of Thin Metallic Films Under the Action of Laser Irradiation"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 71, pp 124-128

Abstract: A method is proposed for the experimental determination of the threshold density of force for the failure of thin metallic films taking into account actual distribution of radiation intensity at a focal spot. Experimental values for films of Ag, Al, Au, Cr, and Cu on a quartz substrate were compared with calculated values. The formula for adiabatic heating:  $q^* \approx (\Delta T p_1 c_1 h) / A t_u$ , where  $T$  -- boiling point temperature of film material;  $p_1$ ,  $c_1$ ,  $h$  -- density, specific heat capacity, and film thickness respectively;  $A$  -- coefficient;  $t_u$  -- length of radiation pulse ( $t_u = 10^{-8}$  sec); was used for one set of data and a modified formula was used for a second set of data. The latter formula is the same as above except it is multiplied by  $(1 + (p_2 c_2 (a_2 t_u)^{\frac{1}{2}}) / p_1 c_1 h)$ . Data for these formulas were plotted along with

1/2

USSR

LEVINSON, G. R., and SMILGA, V. I., Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 71, pp 124-128

data from the experimental tests. It was found that in most cases the experimental values fell between to two curves from calculated data and that, due to the lack of a sufficient number of experimental values to plot, no unique conclusion could be made about the suitability of this or any other formula. Four figures, 10 equations, 4 bibliographic references.

2/2

- 74 -

1/3 021 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--CYCLOTRON PHONON ABSORPTION IN DEGENERATE SEMI CONDUCTORS -U-  
AUTHOR--(02)-BAKANAS, R.K., LEVINSON, I.B.  
COUNTRY OF INFO--USSR  
SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(2), 141-4  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--CYCLOTRON, PHONON, ABSORPTION, INDIUM ANTIMONIDE SEMICONDUCTOR  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1982/1564 STEP NO--UR/0386/70/011/002/0141/0144  
CIRC ACCESSION NO--AP0052767  
UNCLASSIFIED

#2/3 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0052767

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME PECULIARITIES OF OPTICAL PHONON ABSORPTION ASSOC. WITH ELECTRON GAS DEGENERACY  $\zeta$  LARGER THAN  $kT$  ( $\zeta$  IS THE FERMI LEVEL) AND WITH THE QUANTIZING PROPERTIES OF THE MAGNETIC FIELD  $\hbar\omega_{\text{SUBC}}$  IS GREATER THAN  $kT$  ( $\omega_{\text{SUBC}}$  IS THE CYCLOTRON FREQUENCY) ARE CONSIDERED. IT IS ASSUMED FOR THE SAKE OF SIMPLICITY THAT  $kT$  IS LESS THAN  $\hbar\omega_{\text{SUBO}}$  AND  $T$  EQUALS 0 ( $\omega_{\text{SUBO}}$  IS THE DISPERSION FREE FREQUENCY). THE ENERGY CHANGE OF THE ELECTRON DURING PHOTON ABSORPTION ( $\hbar\omega$ ) AND THE EMISSION OF A PHONON ( $\hbar\omega_{\text{SUBO}}$ ) IS  $E_f$  MINUS  $E_i$  EQUALS  $\hbar(\omega$  MINUS  $\omega_{\text{SUBO}}$ ). IN THE TRANSITION, ONLY STATES TAKE PART, THE ENERGY OF WHICH DIFFERS FROM  $\zeta$  BUT NOT MORE THAN  $\hbar(\omega$  MINUS  $\omega_{\text{SUBO}}$ ). AT A CRIT.  $\omega$ , NEW LANDAU STATES,  $\epsilon_{\text{SUBE}}$ , FALL INTO THIS ENERGY INTERVAL. AT  $\omega_{\text{SUBE}}$ , TRANSITIONS INTO A "NEW BRANCH" OF FINITE STATES BECOME POSSIBLE, WHEREBY THE ABSORPTION COEFF.,  $K\omega$ , ACQUIRES THRESHOLD CHARACTERISTICS. AT A STILL HIGHER FREQUENCY,  $\omega_{\text{SUBE}}$  THE NO. OF ELECTRONS OF THE  $\epsilon_{\text{SUBE}}$  LEVEL WHICH ARE IN THE ADMISSIBLE RANGE OF INITIAL STATES GROWS RAPIDLY AND  $K$  SUBOMEGA INCREASES STEEPLY. ABOVE  $\omega_{\text{SUB3}}$ , THE RAPID GROWTH CEASES AND  $K$  OMEGA OBTAINS REVERSE THRESHOLD CHARACTERISTICS. AS AN EXAMPLE, N-INSB IS CONSIDERED, ASSUMING A PARABOLIC BAND ( $m$  EQUALS 0.013  $m_{\text{SUBO}}$ ) AND DISREGARDING SPIN SPLITTING. AT  $N$  EQUALS 10  $\text{PRIME}^{17}\text{-CM PRIME}^3$ ,  $\zeta$  ( $m$  EQUALS 0) EQUALS 700DEGREE SK.

UNCLASSIFIED

3/3 021  
CIRC ACCESSION NO--AP0052767

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--IN A FIELD  $H$  EQUALS 60 KOE, ZETA EQUALS 30DEGREESK AND  
OMEGA SUBC EQUALS 0.8 TIMES 10 PRIME14 SEC PRIME NEGATIVE1 EQUALS  
620DEGREESK. HAVING IN MIND THAT OMEGA SUBO EQUALS 3.7 TIMES 10 PRIME13  
SEC PRIME NEGATIVE1 EQUALS 280DEGREESK, THE WAVELENGTHS OF THE RESP.  
CRIT. FREQUENCIES ARE LAMBDA SUB2 EQUALS 27 MU AND LAMBDA SUB1 PLUS PLUS  
EQUALS 22 MU. THE VALUE OF  $K$  SUBOMEGA IS ESTD. BY TAKING INTO ACCOUNT  
THAT IN THE PRINCIPAL PEAK OF THE CYCLOTRON PHONON ABSORPTION FOR  $N$   
EQUALS 2 TIMES 10 PRIME14-CM PRIME3, ONE OBTAINS EXPTL.  $K$  SUBOMEGA  
EQUALS 0.1 CM PRIME NEGATIVE1, WHICH AGREES WITH THEORY. FOR  $N$  EQUALS  
10 PRIME17-CM PRIME3, ONE-SHOULD EXPECT  $K$  SUBOMEGA EQUALS 10 CM PRIME  
NEGATIVE1 OFF THE PEAK.

UNCLASSIFIED

1/2 012 UNCLASSIFIED  
TITLE--DEASPHALTIZATION OF ACID SLUDGE -U-

PROCESSING DATE--13NOV70

AUTHOR--(05)-MIKHAYLOV, I.A., LEVINSON, S.Z., OROCHKO, D.I., IZOTOVA, P.P.,  
TIMOFEYEVA, K.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 219,057

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL-PATENT, ADSORPTION, PETROLEUM DEASPHALTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3005/0890

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132980

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AA0132980  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACID SLUDGE UNDERWENT  
COUNTERCURRENT ADSORPTION TREATMENT IN SOLN. FACILITY: ALL  
UNION SCIENTIFIC RESEARCH INSTITUTE OF THE PETROLEUM INDUSTRY.

UNCLASSIFIED



USSR

UDC 539.376+532.135

LEVITAS, Ye. M.

"Stability of a Plane Form of Bending Under Creep Conditions"

Ustoychivost' ploskoy formy izriba v usloviyakh polzuchesti (cf. English above), Tula Polytechnical Institute, Tula, 1972, 16 pp (Manuscript No. 4852-72 deposited since 25 October 1972 at VINITI) (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V527 DEP)

Translation: The bulge of a band of rectangular transverse cross section is discussed. Flow theory is taken as the initial law and elastic deformations are not taken into account. A method is indicated for obtaining the relationships for the axial force and the twisting and bending moments (the analog of known Kirchhoff relationships) under large displacements. Small displacements are also discussed for which these relationships are given in explicit form; they form a closed system of equations together with the Kirchhoff-Clebsch equations. It is noted that the problem reduces to a system of two partial differential equations in the case of a rectilinear band in the absence of an axial force. The problem of the stability of a rectilinear band bent by pairs

1/2

USSR

LEVITAS, Ye. M., Ustoychivost' ploskoy formy izgiba v usloviyakh polzuchesti, Tula Polytechnical Institute, Tula, 1972, 16 pp

is solved. The problem of the bending of a rectilinear band by a pair of forces and of a cantilever by a transverse source is also solved by a variational method (Kachanov, L. M., Teoriya polzuchesti (Theory of Creep), Moscow-Leningrad, Fizmatgiz, 1960). A comparison with the solution of the problem of the bending of a rod by a longitudinal source provides foundation for introducing a critical time based on the notion of a critical angle of twisting of the band. Author's abstract.

2/2

- 106 -

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--CHANGE IN THE ACTIVITY OF ALUMINOSILICATE AND ZEOLITE CATALYSTS  
DURING CLOGGING WITH COKE -U-  
AUTHOR--(03)-SABITOVA, V.F., TANATAROV, M.A., LEVINTER, M.YE.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 229-31  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ALUMINUM SILICATE, ZEOLITE, CATALYST ACTIVITY, COKE, CALCIUM  
OXIDE, ION EXCHANGE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3005/0010 STEP NO--UR/0057/70/044/001/0229/0231  
CIRC ACCESSION NO--AP0132310  
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132310

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT, THE DEPENDENCE OF THE ALUMINOSILICATE AND ZEOLITE CATALYST ACTIVITY ON THE ION EXCHANGE ABILITY WAS STUDIED ON PURE CATALYST SAMPLES AS WELL AS ON CATALYSTS PARTIALLY COVERED WITH COKE. 3 VARIOUS CATALYSTS WERE USED DURING THE WORK: GRANULATED ZEOLITE CAX (13.2 WT. PERCENT CAO), INDUSTRIAL AMORPHOUS ALUMINOSILICATE CATALYST (12.5 WT. PERCENT AL SUB2 O SUB3), AND ALUMINOSILICATE CATALYST WITH 20 WT. PERCENT ZEOLITE CAX (3.4PERCENT CAO, 11.4PERCENT AL SUB2 O SUB3). THE ION EXCHANGE CAPABILITY OF THE CATALYSTS (CA PRIME2 POSITIVE, H PRIME POSITIVE, AL PRIME3 POSITIVE) WAS MEASURED WITH NACL SOLN. FACILITY: UFIN. NEFT. INST., UFA, USSR.

UNCLASSIFIED